

# Testing and Certification of Ducts



Ventilation ducts, smoke exhaust ducts, and chimneys are permanently installed products found in infrastructures and buildings. For this reason, they must possess capabilities that ensure they function correctly, especially in the event of a fire and against high temperature fumes and gases.

Manufacturers and distributors of ducts must take into account the current international regulations to be able to commercialize their products in the international markets. In some of them, it is still mandatory to show proof of conformity of the fire security capabilities through the testing of the products in an accredited laboratory.

## Current international regulations for ducts

The current regulatory landscape contemplates a number of requisites depending on the type of report of certificate that you wish to obtain and according to the type of product that must be tested or certified.

- **Resistance to Fire Verification:** Manufacturers or distributors that wish to verify the reaction to fire capabilities of their products must show compliance with regulations **EN1366-1** and **EN 1366-13** (European Union), BS 476-24 (United Kingdom) or ASTM E2816 (United States).
- **European Union Classification Report:** to obtain this report, manufacturers must show conformity of their products according to EN 13501, parts 1, 3, and 4.
- **CE Marking:** to obtain the CE marking and be able to sell your product in within the European Union, manufacturers and distributors of ducts must show their conformity according to EN 12101-7, which requires testing regulated by EN 1366-8 for multi-sector ducts and 1366-9 for mono-sector ducts. Additionally, you must pass an annual inspection of your factory production control system.

## Our methodology

Applus+ Laboratories is a European leader in fire safety testing, as much for its recognitions within the industry as for the number of tests conducted annually. We have available versatile facilities that allow us to adapt to each test according to the characteristics of the product and the fire resistance and smoke control needs of the manufacturer. We can test all types of ducts:

- Ventilation ducts
- Smoke extraction ducts
- Chimneys

## Our laboratories

Our facilities are equipped with versatile test benches that allow us to conduct the required resistance to fire testing for your product. We have eight ovens, in vertical and horizontal configurations of up to 4 metres in width and 5 metres in height.

Applus+ Laboratories is accredited to carry out fire resistance tests on ducts according to the following regulations for ventilation systems, smoke extraction systems (mono-sector and multi-sector), and chimneys:

- **EN 1366-1:** Fire resistance tests for service installations - Part 1: Ventilation ducts
- **EN 1366-13:** Fire resistance tests for service installations - Part 13: Chimneys
- **EN 13501-1:** Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests
- **EN 13501-3:** Fire classification of construction products and building elements - Part 3: Classification using data from fire resistance tests on products and elements used in building service installations: fire resisting ducts and fire dampers
- **EN 13501-4:** Fire classification of construction products and building elements - Part 4: Classification using data from fire resistance tests on components of smoke control systems
- **BS 476-24:** Fire tests on building materials and structures. Method for determination of the fire resistance of ventilation ducts
- **ASTM E2816:** Standard Test Methods for Fire Resistive Metallic HVAC Duct Systems

## Market Access: CE marking

We are also a Notified Body (NB 0370) of the European Union and our laboratories are accredited (C-PR054) to conduct the specified tests for the following product regulations:

- **EN 1366-8:** Fire resistance tests for service installations - Part 8: Smoke extraction ducts
- **EN 1366-9:** Fire resistance tests for service installations - Part 9: Single compartment smoke extraction ducts

Our CE marking service includes:

- Sample taking for the tests
- Testing under European standards
- Initial Factory Production Control System inspection
- Annual Factory Production Control System audit

## Additional services for chimneys

The regulation under which chimneys acquire their resistance to fire certification, EN 1856 (Chimneys - Requirements for metal chimneys - Part 2: Metal flue liners and connecting flue pipes), does not account for a specific classification method, thus not allowing the required traceability to certify the fire resistance capabilities of this type of products.

As a solution, Applus+ Laboratories offers a Spectrum Report for chimneys, in which we detail the model spectrum for the tested product that were tested at our facilities. Como solución. Through this report, we also allow our clients to certify the resistance to fire capabilities of their products thanks to our voluntary certification scheme, the [A+ Fire Safety mark](#).